Executive Fire Officer Program

Operational Policies and Procedures

Applied Research Guidelines

Revised September 1, 2003

**The Executive Fire Officer Program is an initiative of the
Department of Homeland Security's
U.S. Fire Administration
designed to provide senior fire officers and others
in key leadership roles with:**

- An understanding of:

    - the need to transform fire and emergency services
    organizations from being reactive to proactive; with an
    emphasis on leadership development, prevention,
    and risk reduction;

    - transforming fire and emergency services organizations to
    reflect the diversity of America's communities;

    - the value of research and its application to the profession;
    and

    - the value of lifelong learning.

- Enhanced executive-level knowledge, skills, and abilities
  necessary to lead these transformations, conduct research,
  and engage in lifelong learning.

(Revised Statement of Purpose, January 1, 2001)
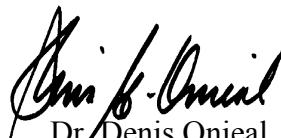
Dear Executive Fire Officer Program Participant:

Welcome to the Executive Fire Officer Program (EFOP). Whether you are new to the program or nearing its completion, your participation is critical to the success of this major U.S. Fire Administration initiative. In light of the events that shocked our nation on September 11, 2001, your leadership within the community that you serve is vitally important. This is the ultimate measure of our program. The challenge that we extend to you is a leadership one. It is to lessen, if not prevent, fires from occurring, and to successfully mitigate the causes and scenarios of fires and other emergencies, including terrorism incidents that result in so much human suffering and economic loss.

This document attempts to categorize and present both the changes and current policies that govern EFOP. The intent is to establish a protocol that promotes equity, trust, and a high level of academic standard.

Please refer to page I-2 in the Operational Policies and Procedures section, which outlines some important reminders.

I encourage you at any time to tell me if there is some way that we can serve you better. Likewise, if you are satisfied with the program, please communicate this word to others.

I wish you the greatest measure of success within EFOP.

Dr. Denis Onieal
Superintendent

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OPERATIONAL POLICIES AND PROCEDURES

REVISED

SEPTEMBER 2003

WHAT IS NEW FOR THE
EXECUTIVE FIRE OFFICER PROGRAM?

APA BECOMES THE EXCLUSIVE STYLE FORMAT

Prior to September of 2003, the Applied Research Project (ARP) was formatted and written primarily to the American Psychological Association (APA) Publication Manual style format. In addition to these guidelines, the National Fire Academy (NFA) had additional style and format requirements. In an effort to simplify these requirements, the NFA guidelines will be dropped beginning in September of 2003 and APA will become the exclusive style for format and writing protocols.

The existing structure (ten sections) of an ARP will remain.

EFOP participants who began the program prior to September of 2003 may continue using the combined APA/NFA format. (This information will be retained in this manual.) Those EFOP participants beginning the program after September 1, 2003, **must use** the new requirements.

APPLIED RESEARCH PRECOURSE

Beginning with the September 2003 *Executive Development* (ED) course, EFOP participants must participate in and complete a "*Research Self-Study Course*." The intent of this prerequisite course is to provide information on how to conduct and comply with applied research. ED participants will be provided this information in advance, and complete this course at home independently. There will be a required exam with an established minimum proficiency level. This course also will be available to EFOP participants who may wish to use the course as a periodic tool for reinforcement and/or remedial work.

USFA OPERATIONAL OBJECTIVES AND APPLIED RESEARCH PROJECT TOPICS

EFOP participants are strongly encouraged to select Applied Research Project topics/issues that support one or more of the U.S. Fire Administration (USFA) operational objectives. The Department of Homeland Security's USFA recognizes that in order for it to achieve its strategic objectives successfully, progress must be achieved in many small steps at the local level. These five operational objectives were the result of collective input from all of USFA's stakeholder groups and organizations. For more information on this, please refer to page II-2.

CERTIFICATION STATEMENT

Beginning in September 2003, a "certification statement" is required for insertion within every Applied Research Project. This statement is to be signed and inserted immediately following the title page. Please refer to page A-1 for a sample of this form.

IMPORTANT REMINDERS

REMINDER REGARDING THE DEFINITION OF APPLIED RESEARCH

The EFOP participant is reminded that an ARP which does not contain original research will receive a failing grade. The Literature Review, while a necessary and required component of an ARP, will not stand alone as the research procedure. The EFOP participant must add to "what other people have already written or said about the research topic" (the Literature Review). These procedures can take the form of new standard operating procedures (SOP's), policy development, evaluation of existing services/ procedures, program implementation, surveys, comparative analysis, or experimentation.

SURVEYS

You are not required to perform a survey. Surveys and/or developed interview processes are just one example of a valid research procedure. The choice of performing a survey process should support the need to obtain information and data to help answer a research question(s). When performing this process, the EFOP participant is cautioned regarding the use of surveys when the sample exclusively represents students who were attending NFA concurrently with the participant and/or when the sample selection is based on NFA/EFOP affiliation.

Normally this sampling approach is flawed, as it does not represent a valid database from which conclusions can be reliably made. For further guidance, if you decide to employ a survey as part of your research procedures, the author is encouraged to consult texts and materials that outline survey research and sampling.

EFOP SUPPORT VOICE MAIL

The EFOP has an EFOP Support Voice Mail line for your convenience. Should you have questions regarding your ARP, the EFO program, course assignments, etc., you may leave a message on the Support Line and your calls will be returned as soon as possible. You may reach the Support Line by dialing 1-800-238-3358, extension 1176, or directly by dialing 1-301-447-1176.

CLASS/COURSE SCHEDULING

For issues related to the scheduling or date assignment of your course, please contact Admissions. The EFO program office is unable to alter your assigned class dates. For questions regarding course scheduling and cancellations, please contact the Admissions Office at 1-301-447-1035.

GRADUATE CERTIFICATE INFORMATION SHEET

You will receive a Graduate Certificate Information (GCI) green sheet when you attend your final course in EFOP, normally *Executive Leadership* (EL). It is essential that you complete and forward the GCI with your final project. If you do not, NFA will not be responsible for the timeliness of transfer of the certificate to you. This information will be provided to the Supervisor of choice that you specify for official presentation of your graduate certificate. The Congressional information will be used to notify members of Congress of your achievement at the end of the fiscal year.

Should you not finish the EFOP with the EL class, a GCI can be requested or you will be notified upon the successful completion of that final project. A sample of the GCI is in the Applied Research Guidelines, Appendix, page A-11.

EXECUTIVE FIRE OFFICER PROGRAM DESCRIPTION

The Executive Fire Officer Program is an initiative of the Department of Homeland Security's U.S. Fire Administration designed to provide senior fire officers and others in key leadership roles with an understanding of:

- the need to transform fire and emergency services organizations from being reactive to proactive; with an emphasis on leadership development, prevention, and risk reduction;
- transforming fire and emergency services organizations to reflect the diversity of America's communities;
- the value of research and its application to the profession;
- the value of lifelong learning; and
- enhanced executive-level knowledge, skills, and abilities necessary to lead these transformations, conduct research, and engage in lifelong learning.

The program contains diverse executive-level curricula, one course per year for 4 years. The program also requires a commitment to complete four applied research projects, a postcourse activity for each course. The sponsoring organization must realize that these research projects require time and potential resources once the participant returns to the organization.

Each EFOP course and Applied Research Project (ARP) has been recommended by the American Council of Education to receive college level credit.

The sequencing of the program is as follows (reference flowchart on page I-19):

FIRST YEAR COURSE

Executive Development

This course is designed to assist fire service personnel in developing effective management and leadership skills as they make the transition from manager to senior executive.

Through a combination of theory, case study analysis, reflection, introspection, and self/observer-based assessment, students learn how to enhance team development and apply action research.

Course units include Adaptive Leadership, Teams, Change Leadership, Research, Change and Creativity, Organizational Culture and Change, Ethics and Change Leadership, Service Quality, and Legal Issues.

SECOND YEAR COURSE

Leading Community Risk Reduction

This course focuses on senior executive roles and responsibilities relating to comprehensive community risk reduction, with an emphasis on fire prevention, code enforcement, public education, mitigation, and injury prevention.

It will provide participants with information in the areas of all-hazards management, developing and building coalitions, understanding one's changing community, application of data analysis, leading change in the legal environment, societal trends, affecting strategic change through models and management, and evaluating success: what it is and what does it look like?

Course participants will be required to formulate a comprehensive risk-reduction plan using a simulated environment for risk to be assessed and mitigated.

THIRD YEAR COURSE

Executive Analysis of Fire Service Operations in Emergency Management

This course is designed to prepare senior staff officers in the administrative functions necessary to manage the operational component of a fire and rescue department effectively. Since the subject matter is comprehensive, it requires maximum use of the student's time. Some of the areas covered are risk assessment, incident documentation, media/political considerations, standards, legal mandates, capability assessment, damage assessment, emergency operations, Integrated Emergency Management System (IEMS), Emergency Operations Center (EOC), and emergency information systems.

Throughout the course, students are presented with a series of senior-staff-level issues that require extensive analysis and action. The actions implemented are applied to a mock community in order to evaluate the effectiveness of these decisions relative to the fire and rescue department's operational readiness.

The course is very intense and uses lecture, case study, simulation, scenario, and student participation as instructional media.

FOURTH YEAR COURSE

Executive Leadership

The concluding course was specifically designed to provide a framework of executive level competencies by focusing primarily on *personal effectiveness* issues and areas.

The curriculum includes self- and observer-based survey assessment instruments, case study analysis, role-playing, and experiential activities. Participants complete a "self assessment and development plan" to create desirable goals in their professional, personal, community, and family life areas.

Course units include leadership; multiple roles; decision skills, influencing, storytelling, persuasion, succession planning, and evaluating.

Each program participant is required to complete an applied research project for each of the four courses as a postcourse project. The requirement is explained fully within this document.

EFOP TARGET AUDIENCE

The EFOP target audience is current and emerging executive-level leaders in fire and emergency service organizations. The selection criteria is divided between two requirement areas: Service Requirement and Academic Requirement.

SERVICE REQUIREMENTS

- Chief of Department or equivalent.

- Those chief officers who report directly to the fire chief.

- Chief officers or equivalent who head major bureaus or divisions within a fire department, e.g., suppression, prevention, training, emergency medical services, etc.

- Chief officers and senior deputies of State governmental fire organizations, e.g., State Fire Marshals and State Directors of Fire Training.

- Other individuals who are serving in "key leadership" positions. Please refer to "Key Leaders" selection criteria.

ACADEMIC REQUIREMENT

- Applicants must have attained an Associate's Degree or greater from a regionally accredited institution of higher learning. No exception will be made to this requirement.

- Beginning October 1, 2009 (Fiscal Year 2010), applicants must have attained a minimum of a Bachelor's Degree.

"KEY LEADERS" SELECTION CRITERIA

The EFOP is USFA's premier executive education program with a limited capacity of participants each year. The primary audience is executive-level chief officers; however, a limited number of non-executive-level applicants who are serving in "key leadership" positions will be considered for the EFOP. Once the minimum Academic Requirement has been demonstrated, candidates will be selected on the following criteria:

(Note: It is not required that a candidate possess all of the following. However, the more achievements and criteria presented, the stronger a candidate's application will be considered.)

- An advanced academic degree from a regionally accredited college or university.

- Unique perspectives that would broaden the diversity of EFOP.

- Strength of the department chief's or sponsor's recommendation, commitment to supporting the applicant's participation, and description of the applicant's potential impact on the organization.

- Personal accomplishments and significant contributions to the fire and emergency services and/or the community.

- Potential for future impact on the fire service.

It is expected that the applications for these limited number of positions will be very competitive in nature. Applicants are encouraged to carefully review all of aforementioned and following selection/application elements before submitting their application package.

COURSE SCHEDULING

Selected EFOP participants will be scheduled to attend specific course offerings by the Admission's Office. Rescheduling or cancellation requests must be addressed to the Admission's Office in writing.

Even though a participant is scheduled to attend a specific course, final admission to all courses is conditional upon submittal and successful evaluation of the required project.

The Admissions office may be contacted at (301) 447-1035.

APPLICATION PROCESS

Prospective EFOP candidates must participate within a structured and competitive selection/application process. The initial phase in this process is to submit a National Fire Academy General Admission Application Form (FEMA Form 75-5). This form is to be submitted following the guidelines announced annually in the National Fire Academy's *Catalog of Activities.* Within the application, the applicant should specify in Block #9a, "Executive Fire Officer Program." The application period for the EFOP is open year round; however, the cutoff date for consideration within the following fiscal year is June 30. Applications received after this date will be considered for the following fiscal year. For example, an application received prior to June 30, 2003, will be considered for Fiscal Year 2004. An application received after June 30, 2003, will be considered for Fiscal Year 2005.

Along with submission of the General Admission Application, the candidate is required to submit each of the following:

- A letter from the applicant requesting admission to the EFOP. The letter should specify the applicant's qualifications (reference NFA catalog), and commitment to complete the entire program, **including the Applied Research Project process**. Personal expectations for the program also should be included.

- A letter of recommendation from the head of the sponsoring organization (Chief of Department, Mayor, City Manager, etc.) indicating the organization's commitment to allow the participant to complete the entire program, **including the Applied Research Project process**.

- A résumé of the applicant.

- A copy of the individual's organizational chart, specifically identifying the position on the chart that the individual holds.

- A photocopy of the applicant's academic degree certificate/diploma.

EFOP candidates who have complied with the EFOP minimum prerequisites will be forwarded a secondary application entitled "National Fire Academy Executive Fire Officer Program Application for Admission" (FEMA Form 95-22, October 94). This form is to be completed following the stated guidelines.

Both application forms, as well as the required accompanying materials, will be evaluated in assessing each applicant's qualifications for EFOP acceptance. Each applicant will be notified in writing as to either acceptance or nonacceptance into the EFOP.

"CONDITIONAL ACCEPTANCE" INTO THE
EXECUTIVE FIRE OFFICER PROGRAM

Individuals who have completed EFOP courses (*Executive Development*, *Leading Community Risk Reduction*, *Executive Analysis of Fire Service Operations in Emergency Management*, and *Executive Leadership*) in a non-EFOP status may later elect to become a part of the EFOP process. "Conditional Acceptance" into the EFOP will be based on the following steps/requirements:

- The criteria stated within "Selection Criteria" beginning on page I-6, must be met. Furthermore, the selection procedures stated within "Application Process," beginning on page I-7, will apply. That is, those applicants who wish to be conditionally accepted will compete in the annual selection process within the entire pool of EFOP applicants.

- For those who receive notification that they are conditionally accepted, an Applied Research Project (ARP) would be required for each EFOP course completed as a non-EFOP participant. The conditionally accepted participant will have 6 months from the date of acceptance to complete the ARP. Those who have to complete two or more ARP's, will be granted 6 months for each ARP due.

COMPLETION OF EFOP COURSES
BY NON-EFOP PARTICIPANTS

Non-EFOP participants who comply with individual EFOP course prerequisites can attend such courses if space is available. (Non-EFOP participants are not required to have an Associate Degree.)

While these individuals may be completing an EFOP course, they are not considered to be EFOP participants. Therefore, these individuals are not required to complete the ARP, nor can NFA accept and evaluate ARP's from non-EFOP participants.

MAINTAINING ELIGIBILITY

If at any time during the 4-year period of the EFOP a participant's rank or responsibility is reduced or altered, and such change would remove the participant from a "state of eligibility" as stated previously, the participant shall be removed from the program. These changes include personnel changes, change of assignment, and leaving the service.

Unfortunately, this removal from the program is indifferent to whether the change or alteration was voluntary or involuntary on the part of the participant. This provision is necessary to recognize the limited course slots available, and to maximize this limited availability to individuals who meet the established criteria.

EFOP participants are required to notify NFA immediately as to any change in address or position.

Participants who cannot attend a course for which they are scheduled are required to notify the Admissions Office as soon as possible before the class begins; failure to do so may result in future suspension of eligibility to attend NFA courses.

SUCCESSFUL PROGRAM COMPLETION

Successful EFOP completion will be based on the following criteria:

- Compliance with general attendance policies and standards of conduct as established by NFA.

- Successful completion of EFOP courses, including satisfactory completion of the evaluation plan/curriculum for each course.

- Successful completion of the Applied Research Project for each EFOP course according to the Applied Research Project guidelines.

STANDARDS OF INTEGRITY WITH REGARD TO RESEARCH

Due to a few incidents of plagiarism, falsification, and misrepresentation of submitted ARP's, NFA is required to reinforce the appropriate standards of conduct for completion of research, and the potential penalties for engaging in any unethical behavior. Federal Emergency Management Agency instruction NETC 1100.1, Section 7, Subsection 17, states, "Each individual entering the NETC campus shall observe the stated rules and regulations regarding conduct and the completion of academic work. Cheating, plagiarism, or falsification of any type, including misrepresentation, is prohibited."

Individuals who engage in such behavior will be disciplined with one or all of the following actions:

1.   A return of all monies expended or reimbursed by the U.S. Government associated with the course, to include all travel expenses, room accommodations, books, and an apportionment of the instructor's salary.

2.   A return of the course certificate and (if applicable) the EFOP completion certificate.

3.   A letter to the current employer that certification has been revoked.

4.   A 10-year prohibition on attendance at any residential NFA courses.

EFOP participants, graduates, and others who discover suspicious work are strongly encouraged to report their findings to NFA.

CERTIFICATION STATEMENT

Beginning in September 2003, a "certification statement" is required for insertion within every Applied Research Project. This statement is to be signed and inserted immediately following the title page. Please refer to page A-1 for a sample of this form.

NFA is committed to maintaining and preserving the highest standards of integrity regarding EFOP. Participants and alumni are consequently affected in a most negative way when EFOP is associated with any unethical behavior committed by one of its participants.

APPLIED RESEARCH PROJECT

Individuals enrolled in the EFOP must complete an Applied Research Project for each EFOP course completed.

The specific guidelines for the completion of this project are contained within a document entitled "National Fire Academy Executive Fire Officer Program Applied Research Guidelines." These guidelines have been included within this document (see Table of Contents).

The project is due within 6 months from the last day of the course for which the project is being completed.

APPLIED RESEARCH EVALUATION

Each ARP will be evaluated according to the guidelines established within the document *National Fire Academy Executive Fire Officer Program Applied Research Guidelines*. **ARP's must receive a passing grade (2.0 or greater) in each section to be considered an acceptable or passing ARP.**

Currently, the projects are evaluated by contract reviewers who are monitored and supervised by the *Executive Development* Program Manager.

Contract reviewers are selected on the basis of their technical knowledge as well as their ability to recognize and evaluate research.

Reviewers use the three-page "Applied Research Evaluation Form" to critique and evaluate the project. (See Appendix, pages A-3 through A-5.)

In the event that an EFOP participant receives a failing grade for an applied research project, the participant will have 45 days, commencing upon the participant's receipt of the evaluated research project, to make the required corrections and to perform whatever action is necessary to bring the research to an acceptable standard.

Detailed information regarding submission of ARP's to NFA is provided on page II-3 of the Applied Research Guidelines contained within this booklet.

APPLIED RESEARCH EXTENSION

ARP's are due within 6 months from the final day of course completion.

If the ARP has not been received by NFA on the due date, NFA will instruct Admissions to terminate the individual from the EFOP. The exceptions to this provision are noted as follows:

- Additional time may be granted to a participant in the event of death in his/her immediate family or severe personal illness. An extension of completion time may be requested due to either of these situations.

- Only for unique circumstances of a serious nature would an extension be granted for reasons other than those cited above.

- The request for extension must be directed, in writing, to the Superintendent of the NFA. A reason must be given why the extension is being requested. The request must be cosigned by the individual's chief of department or local government executive official.

- A maximum extension of 1 month may be awarded for completion of the ARP. A decision in response to the participant's request will be forwarded in writing.

If for any reason an EFOP participant drops out or is removed from the program, re-admission to the EFOP would require the following steps in sequence: reapplication, acceptance, and subsequent completion of any outstanding ARP(s).

APPLIED RESEARCH PROJECT GRADE APPEAL

If an EFOP participant disagrees with a grade, the participant first should contact the evaluator to discuss the disagreement. If a compromise cannot be reached between the EFOP participant and the evaluator, the EFOP participant should direct an appeal to Mr. Chuck Burkell. This appeal must be in writing, and fully explain the basis of the disagreement. Mr. Burkell or his representative will research the problem, and will either uphold the evaluator's assessment or elect a course of action to resolve the disagreement.

If an appeal results in a change to the original grade issued by the evaluator, the grade of record shall be the **final grade issued**. If the appeal results in a final grade of 4.0, then the ARP will be considered for the Outstanding Applied Research Award (see below). In either situation, the grade of record is based on original work, and not on changes made after the initial submission of the ARP.

EXECUTIVE FIRE OFFICER PROGRAM OUTSTANDING RESEARCH AWARD

Since 1989, NFA has recognized excellent ARP's completed by EFOP participants. Recipients of this award are asked to present their papers at the EFOP Graduate Symposium. The process of selection and presentation is as follows:

1. NFA's Outstanding Research Award is given annually. Normally, four awards are presented, one award for each year of the program. However, depending on the quality of available 4.0 papers, NFA may elect to present fewer or more than four awards in a given year.

2. The review team is comprised of EFOP program chairs, as well as other U.S. Fire Administration staff.

3. The Training Specialist reviews all ARP's that receive a grade of 4.0 in each course area for 1 year. In the event that there is no 4.0 paper in a course area, the highest graded paper is reviewed.

4. EFOP research papers completed between January 1 and December 31 in a given year are eligible to be considered for the award.

5. ARP's are evaluated by contractors based on the Executive Fire Officer Applied Research Guidelines. The evaluators assign grades to the papers. The review team reads the 4.0 papers and, based on their judgment, recommends to the Superintendent the Outstanding Research Awards.

6. The official notification to the award winners comes from the Superintendent by mail. The Chief of Department or the local government official receives a copy of the letter. The USFA Office of Public Affairs handles the press announcement.

7.   The papers are published by NFA. The printing quality and standard for the reproduction depends on available funding resources. Award-winning papers are distributed to the attendees of the EFOP Graduate Symposium and a copy of each paper is placed in the Learning Resource Center (LRC). Dissemination beyond this is dependent on available funding.

8.   Design and reproduction of the Outstanding Research Award certificate is executed by National Emergency Training Center (NETC) Media.

9.   The recipients of the Outstanding Research Award are invited to present their papers at the EFOP Graduate Symposium.

Outstanding Applied Research projects for recent years may be downloaded from the U.S. Fire Administration's Web site by using this address: http://www.usfa.fema.gov and selecting the National Fire Academy/On-Campus Courses/Executive Fire Officer Program, or in hardcopy by contacting NFA.

PROGRAM DISMISSAL

As stated previously, failure to maintain eligibility for the program or failure to meet program completion criteria will result in dismissal from the EFOP. Other factors that could lead to dismissal relate primarily to the ARP. As stated in other areas of this document, the ARP is due 6 months following course completion.

Thus, if the completion date precedes the course starting date by even 1 day, the implication is made that:

- the EFOP participant has submitted an ARP for evaluation, or
- the EFOP participant has submitted an ARP; the ARP has received an unsatisfactory evaluation; but the EFOP participant is making corrections to the unsatisfactory ARP.

Failure to have accomplished either activity by the ARP completion date will cancel the participant's eligibility to return for the next course in sequence, and the participant will be dismissed from EFOP.

APPLIED RESEARCH PROJECT ARCHIVING
AND DISTRIBUTION

Since NFA is on the threshold of establishing and building upon a major source of research information (*The Applied Research Project Collection*), it may be useful to understand the intended nature of archiving and distributing this information to others.

Once a project is successfully evaluated (receives a passing grade), it will be forwarded to the LRC.

Projects evaluated at 3.0 or higher, will be archived in their entirety. For projects receiving ratings of 2.0 through 2.9, only the abstracts will be archived. Participants who have an interest in these projects may contact the author for more information. Projects that are resubmitted following corrections **will not** be archived, regardless of the rating awarded.

(Note: In recent years, a large number of ARP's have been converted for full "online" access. To access this Web site, go to http://www.usfa.fema.gov/lrc. To search for papers, select "EFO Papers or Abstracts" from the Document Type list found on the Card Catalog search screen.)

An index list will be created indexed by the author's last name. This will allow all of the projects completed by an individual participant to be grouped together. Refer to page I-15 and I-16 for a sample bibliographic record.

EFOP ARP's will be used by the LRC in providing information services to patrons of the LRC.

APPLIED RESEARCH PROJECT COLLEGE
CREDIT RECOMMENDATIONS

The American Council on Education (ACE) through its Program on Non-Collegiate Sponsored Instruction (PONSI) reviewed the ARP process in its entirety. ACE, through its published guide *The National Guide to Educational Credit for Training Programs*, now recommends for credit equivalency, 1 hour for each ARP successfully completed after October 1, 1995. Successful completion is defined as a "3.0" or greater score. The level is either graduate or upper division baccalaureate.

Projects that are resubmitted following corrections **will not** be eligible for credit recommendation, regardless of the rating awarded.

Sample LRC Bibliographic Record

DOCUMENT TYPE	REPORT
AUTHOR	Senter, Edward L.
CORPORATE AUTHOR	Norfolk Fire and Paramedical Services
TITLE	Improving fire apparatus life span projections in the Norfolk Department of Fire and Paramedical Services
SERIES TITLE	Executive Fire Officer Program. Applied Research Project.
PUBLISHER	National Fire Academy
PLACE	Emmitsburg, MD
DATE	May 1999
COLLATION	78 P.
CALL NUMBER	29736
NOTES	Norfolk, VA; Financial Management; Abstracts for EFO papers are written by the author
SUBJECTS	FIRE APPARATUS; LIFE EXPECTANCY
URL	www.usfa.fema.gov/pdf/efop/efo29736.pdf
AVAILABILITY	Available on Interlibrary Loan

ABSTRACT Fire apparatus replacement intervals should be based on the estimated effects of variables such as age, use, and maintenance costs on useful life span. The problem was the replacement intervals of the Norfolk Department of Fire and Paramedical (NFPS) were based exclusively on age. The purpose of this research was to examine variables that may affect useful life span, compare planned replacement intervals with projected life spans, examine the replacement practices of other fire departments, and identify steps to improve fire apparatus life span projections.

Descriptive research was used to answer the following questions: 1. What are the ages, mileage totals, unit activity levels, maintenance costs, and performance tests for NFPS apparatus? 2. What is the operating condition and performance level of each fire apparatus in the NFPS fleet, as judged by fire apparatus operators? 3. How do the planed replacement intervals of the NFPS compare to the remaining useful life spans of fire apparatus, as projected by fire apparatus operators? 4. What variables do other local fire departments examine when assessing fire apparatus for replacement?

The procedures used to complete this research consisted of a literature review, a records review, an apparatus survey, and a fire department survey. The results of this research included the substantiation of the research others, the discovery of practices that were incongruent with the recommendations of others, the identification of varied apparatus operating conditions and performance levels, the detection of shortcomings in planned replacement intervals, and the discovery of an objective apparatus assessment process.

The recommendations of this research project included the development of apparatus programs to manage and analyze data, assess operating condition, and test performance. Also included were recommendations to search for alternatives for extending life spans, and to educate other about fire apparatus needs.

EXECUTIVE FIRE OFFICER PROGRAM GRADUATE SYMPOSIUM

EFOP Graduate Symposium is an annual event for alumni. Normally held the weekend following Easter, the 3-day event has the following goals:

- to provide a curriculum extension and update of EFOP;
- to recognize and spotlight outstanding applied research completed by present EFOP participants;
- to provide a forum in which high quality presentations are offered by private and public sector representatives;
- to promote further dialogue between EFOP graduates and USFA/NFA faculty and staff;
- to further facilitate networking between EFOP graduates; and
- to officially recognize EFOP graduates and research winners during the EFOP banquet.

Participants are required to pay their own travel costs and meals. NFA provides housing and the program costs. See NFA catalog for symposium dates.

Eligibility to attend the symposium is limited to those EFOP participants who have successfully completed all course and project requirements.

The 16th Executive Fire Officer Program Graduate Symposium is scheduled for April 16-18, 2004.

MANAGEMENT OF THE
EXECUTIVE FIRE OFFICER PROGRAM

Since the EFOP participant may have reason to contact one or more NFA faculty members regarding either the ARP or other EFOP questions, the following is a list of faculty with their assigned areas of EFOP responsibility.

DIRECT PROGRAM RESPONSIBILITY

Mr. Chuck J. Burkell
(301) 447-1072
e-mail: chuck.burkell@dhs.gov

- Administrative responsibility for EFOP
- Administrative responsibility for ARP's
- Curriculum responsibility for *Executive Development*, *Executive Leadership*, and *Executive Skills Series* courses
- Administrative responsibility for EFOP Graduate Symposium
- Administrative responsibility for the *Harvard Fellowship Program*

Dr. Burton A. Clark
(301) 447-1069
e-mail: burt.clark@dhs.gov

- Supporting responsibility for Outstanding Applied Research Project administration, EFOP, and EFOP Graduate Symposium

Ms. Angie Krantz
(301) 447-1176
e-mail: angela.krantz@associates.dhs.gov

- Supporting responsibility for Applied Research Project administration, EFOP, and EFOP Graduate Symposium

Mr. Robert Murgallis
(301) 447-1347
e-mail: bob.murgallis@dhs.gov

- Curriculum responsibility for *Executive Analysis of Fire Service Operations in Emergency Management*

Dr. Frank Richardson
(301) 447-1476
e-mail: frank.richardson@dhs.gov

- Curriculum responsibility *for Leading Community Risk Reduction*

EXECUTIVE FIRE OFFICER PROGRAM

1st YEAR
Executive Development → Applied Research Project

2nd YEAR
Leading Community Risk Reduction → Applied Research Project

3rd YEAR
Executive Analysis of Fire Service Operations in Emergency Management → Applied Research Project

4th YEAR
Executive Leadership → Applied Research Project

Award of EFOP Certificate
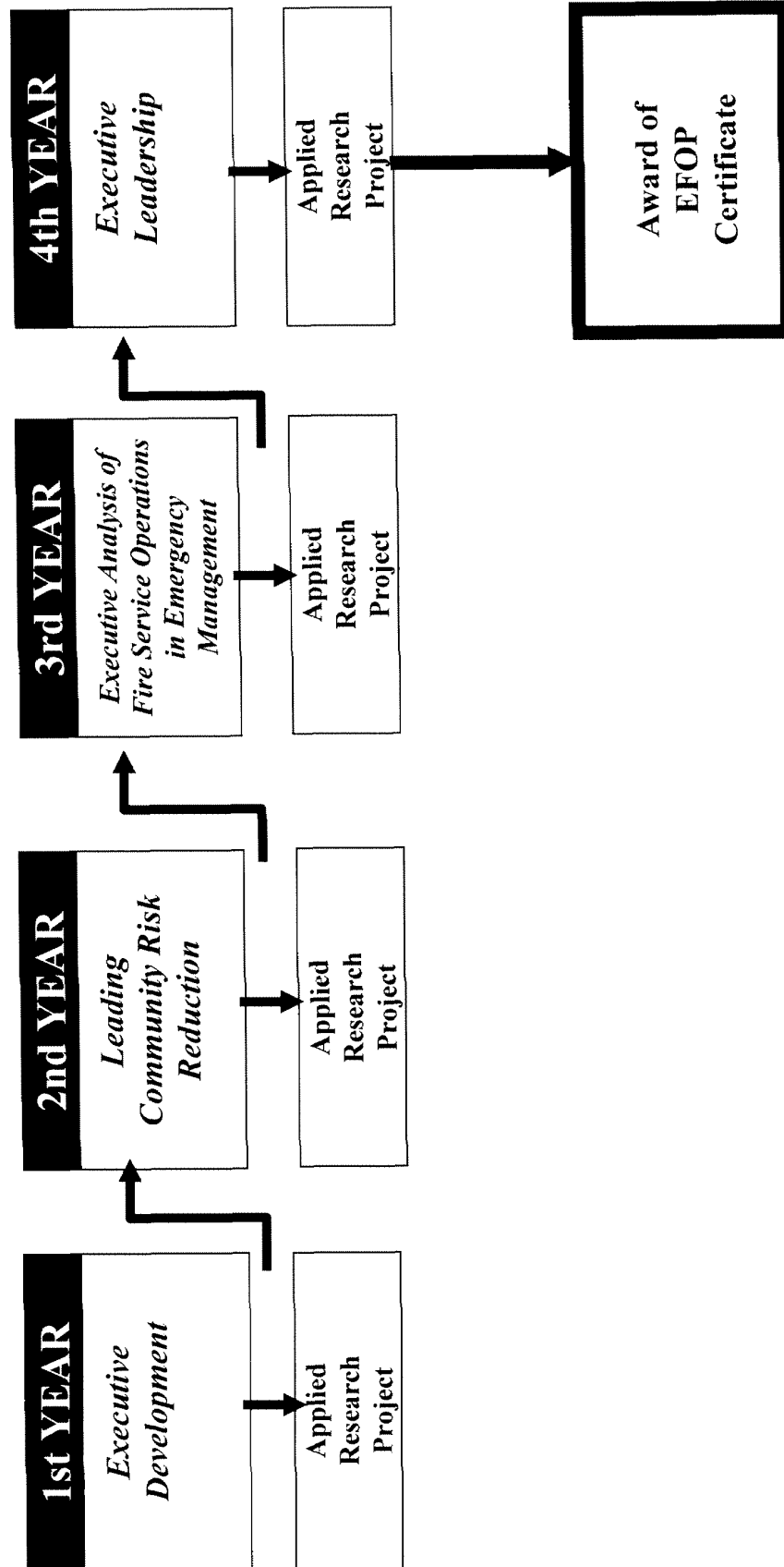
APPLIED RESEARCH PROJECT GUIDELINES

REVISED

September 2003

INTRODUCTION

This guide is designed to assist students enrolled in the National Fire Academy's (NFA) Executive Fire Officer Program (EFOP) in fulfilling the applied research requirements of the program. The primary objective of the guide is to describe what is expected of students as they engage in the research process. In addition, it provides guidelines for students to follow in the preparation of their research paper.

The guide also includes the criteria used in the evaluation of research papers. These criteria are used by those persons responsible for reviewing and evaluating students' proficiency in completing the applied research project for EFOP.

Students must complete one Applied Research Project (ARP) for each course in EFOP. The reports must be sent to the NFA within 6 months of completing each course. In order for the student to continue in the EFOP, a project must receive a grade of "C" (score of 2) overall. ARP's **must receive a passing grade (2.0 or greater) in each section to be considered an acceptable or passing ARP**. Upon completion of the final ARP for the *Executive Leadership* course, the student will be awarded the Executive Fire Officer certificate.

Participants are required to submit the ARP in both hard copy and disk media formats.

Those Executive Fire Officer ARP's, which receive a rating of 3.0 or greater will be archived in the National Emergency Training Center's (NETC) Learning Resource Center (LRC) in their entirety. For projects receiving a rating of 2.0 to 3.0, only abstracts will be on file.

Selected examples of completed projects are available by title or area of interest.

WHAT IS AN APPLIED RESEARCH PROJECT?

The applied research project in the EFOP is designed to allow students to investigate a key issue or problem that has been identified as being important to their fire service organization. Upon completing the investigation, students will be able to reach conclusions and offer recommendations that contribute to the improvement of their organization.

Through this process, students have an opportunity to translate what they have learned in each EFOP course into real-world applications. By writing the applied research project in a professional paper format, EFOP students are contributing to the fire service literature.

SELECTION OF APPLIED RESEARCH TOPICS

Applied research topics should be selected on the basis of four factors:

1.   The author's individual interests.

2.   The significance or value of the topic and/or issue to the organization.

3.   The relationship of the topic or issue to the EFOP course content.

4.   The relevance of the topic or issue to U.S. Fire Administration (USFA) operational objectives.

Take care to select a topic that can be completed within the 6-month timeframe.

The following questions should assist you in selecting your project topic:

1.   Does the topic relate to the EFOP course most recently completed?

2.   Is the topic worth researching? (Will it contribute to your organization?)

3.   Will it be possible to implement the conclusions and possible solution?

4.   Are there sufficient data available to do the research?

5.   Does the topic or issue relate to and support one or more of five USFA operational objectives? (These objectives are as follows:)

    a.   Reduce the loss of life from fire in the age group 14 years old and below.

    b.   Reduce the loss of life from fire in the age group 65 years old and above.

    c.   Reduce the loss of life from fire of firefighters.

    d.   To promote within communities a comprehensive, multihazard risk-reduction plan led by the fire service organization.

    e.   To respond appropriately in a timely manner to emerging issues.

6.   Do you have sufficient time (within the 6-month timeframe) to complete the project?

RESEARCH PROPOSAL

For each course completed, EFOP participants are provided a research proposal form (Refer to Page A-13 for sample form) while completing their EFOP course. The form will contain the name and address of a contract evaluator who will be assigned to review the proposal form. The same evaluator will be the individual to whom NFA will forward the EFOP participant's ARP upon completion.

When the EFOP participant returns to his/her jurisdiction, the research proposal should be completed and forwarded to the assigned evaluator within 2 weeks. The form contains the proposed title, topic, problem statement, purpose, research questions, and research approach. The evaluator will review this information and provide general feedback to the EFOP participant regarding the proposal. (Note: The form will not be graded. Only general feedback will be provided regarding the quality of the research design proposed.) It is not necessary for the EFOP participant to provide a copy of the form to NFA, as the evaluator will submit it when invoicing NFA for this task.

The purpose of this step is to assist the EFOP participant in a critical phase of the research process: creating a realistic problem statement; matching the problem statement with the purpose; writing research questions that, if answered, will result in data to solve the problem; and the necessary procedures to facilitate achieving the purpose and solving the problem statement.

REMINDER: Please submit the completed Proposal Form directly (e-mail) to your assigned evaluator. Do not submit to NFA. The completed Applied Research Project should be sent directly to NFA, not to the evaluator.

REPORT FORMAT

VERY IMPORTANT

The following pages (pages II-3 to II-11) are applicable to EFOP participants beginning the program in September 2003 or after.

For EFOP participants who began the program before September 2003, the report format as listed on pages II-13 to II-23 is optional.

In either situation, all reports must contain each of the following elements. Failure to include any required element will result in loss of points on final score.

REQUIRED ELEMENTS OF PAPER (IN ORDER)

1. Title Page (separate page).
   (See sample in APA Manual, p. 306)

2. Certification Statement (See sample on p. A-1)

3. Abstract (Start on a separate page).

4. Table of Contents (Start on a separate page).

5. Main body of paper, including the following sections:

   - Introduction

      - Background and Significance

      - Literature Review

      - Procedures

      - Results

      - Discussion

      - Recommendations

6.   Reference List [Start on a separate page].
        (See sample in APA Manual, pp. 313-314)

7.   Appendices (optional)

GENERAL SUBMISSION CONSIDERATIONS FOR EVALUATION

When a student submits an ARP report, NFA expects it to be in **final form**; that is, the report will be a finished product. In no instance should a student submit a report that is incomplete, in draft form, or grammatically incorrect. NFA expects quality performance on the part of EFOP students. The written ARP report should be organized according to the ARP Guidelines. Reports may range normally between 20 and 30 typed pages (double-spaced), excluding reference list and appendices. However, due to the complexity of a research topic, an ARP may be greater than 30 typed pages and considered acceptable. NFA expects students in the EFOP to be capable of expressing themselves in a correct and effective manner. It is important that the papers demonstrate high professional quality because each is a major contribution to fire service literature.

Three hard copies and a disk copy of the project must be submitted to NFA. **Please do not use permanent binding on your submitted project.** A staple in the upper left corner is sufficient. Disk copies of projects should be formatted in one of the following word processing formats:

a)   Microsoft Word (preferred format) or
b)   Word Perfect

Disk copies should be labeled to include the following information:

      Student Name
      ARP Title
      Course
      Submission Date
      Word processing format

SUBMISSION INFORMATION

ARP's should be submitted to the following address:

National Fire Academy
16825 South Seton Avenue
Emmitsburg, Maryland 21727

ATTN: Executive Fire Officer Program Research Project

Students are strongly encouraged to use a traceable mailing system, i.e., Return Receipt Requested--U.S. Postal Service, FedEx, etc., and to maintain a backup copy of both paper and disk. **The Academy is not responsible for projects not received on the NETC campus.**

SPECIFIC EVALUATION CRITERIA

Reports will be evaluated on 10 separate components. (See sample Evaluation Form in Appendix A-3 through A-5. Note: The sample evaluation form in the Appendix, page A-3, is for reference only; actual forms will be attached by NFA to all ARP's when they are forwarded to the evaluator.) Each component has specific criteria by which it will be measured. When an evaluation component is also a required section of the paper (i.e., the first **eight** components), **no credit** will be given unless a section with that title is included in the paper.

ABSTRACT

Students are required to include an abstract of their project along with the completed report. The abstract should summarize the problem, purpose, research method, research questions or hypothesis, procedures, results, and recommendations of the study. It should not contain more than 120 words.

Evaluation Criteria

1. Accurate and self-contained.

2. Primarily written in past tense.

3. Problem statement defined.

4. Purpose statement defined.

5. Research method defined.

6. Research question(s) or hypothesis(es) defined.

7. Procedures summarized.

8.   Results summarized.

9.   Recommendations summarized.

INTRODUCTION

This section sets the stage for the research completed by the author. After reading the **Introduction**, the reader should clearly understand the **nature of the problem**, which led to the study, the **purpose** of the study, the **research method** chosen (historical, descriptive, evaluative, action, correlational, causal-comparative, or experimental) and the **research questions** addressed or the **hypothesis**, which was tested.

Evaluation Criteria

1.   Problem statement precisely and clearly defined.

2.   Purpose of the applied research project precisely and clearly stated.

3.   Specific research method used in the study identified.

4.   Research questions clearly stated. (For historical, descriptive, evaluative, or action research only).

<div align="center">OR:</div>

5.   Hypothesis clearly stated (for correlational, causal-comparative, or experimental research only) and appropriate for research method identified.

BACKGROUND AND SIGNIFICANCE

This section is an extension of the introduction wherein the author explains the **background** of the problem being researched; the past, present, and probable future **impact** of the problem on the organization; and how the project is related to the specific EFOP course being completed.

Remember, the research project must investigate a specific problem presently affecting the student's **own** organization. It is not acceptable to complete a project on some general fire service issue.   Thus, this section must explain in considerable detail (1) the seriousness of the problem, (2) the significance of the project to the organization, and (3) which specific EFOP course content area(s) relate to the problem and/or its hopeful resolution.

Evaluation Criteria

1.   Clear and complete background analysis of the problem provided.

2.   Sufficient evidence provided to justify the study from an organizational perspective, based on past, present, and probable future impact on the organizational effectiveness.

3.   Definitive linkage established between the research problem and specific content area(s) of the relevant EFOP course.

4.   Established linkage to one of five USFA operational objectives.

LITERATURE REVIEW

This section summarizes critical findings of others who have **published** documents related to the research problem and clearly describes how such information influenced the author's research effort.

If appropriate, this section also may include a summary of any interviews the author conducted with problem-area "experts." Be sure to explain why specific person(s) were selected to interview. As with published material, such summaries should describe clearly how the interview(s) influenced the research project.

Evaluation Criteria

1.   Sufficiently comprehensive.

2.   Findings of others reviewed.

3.   Summary statements (concluding summary paragraph[s] at the end of Literature Review) provided on how the findings/observations of others influenced the project.

4.   Current sources.

PROCEDURES

This section explains how the student arrived at the final results of the study. Procedures should be described in sufficient detail to: (1) permit the evaluator to determine whether the researcher has selected and completed procedures which were appropriate for the stated purpose and method; (2) allow interested readers to replicate the project in their own organization; and (3) explain how the researcher arrived at final results.

The general procedures listed in the Student Manual of the *Executive Development* course (Research Module) should provide sufficient guidance on acceptable procedures for those doing historical, descriptive, evaluative, or action research. Individuals who elect to conduct correlational, causal-comparative, or experimental research should consult L.R. Gay's *Educational Research Competencies for Analysis and Application* for guidance on required research procedures.

In any event, the procedures section should clearly describe how the project progressed from beginning to end. (What was done? When? By whom? Who was involved?) If interviews or observations were used, describe the process in detail: when, how long, purpose, questions asked/information sought, etc. If a survey was conducted, explain the purpose and define the audience (number of total population surveyed, number of surveys returned, etc.). Always include a copy of the actual survey as an appendix. If a **sample** was used, provide clear evidence of proper sample selection (appropriate size, random selection, and how you assured that the sample was representative of the total population).

Evaluation Criteria (Historical, Descriptive, Evaluative, and Action Research)

1. Procedures sufficiently and clearly delineated to permit replication.

2. Procedures appropriate to achieve the purpose of the study.

3. For surveys, definition of total population included; if used, process for selecting samples described.

4. Limitations noted.

5. A Definition of Terms section included for any ambiguous concepts.

Evaluation Criteria (Correlational, Causal-Comparative, and Experimental Research)

1. All of above, **plus**:

2. Appropriate statistical analyses selected and justified.

3. Hypothesis clearly stated and variables clearly defined.

4. Statistical significance of results documented.

5. Nonexperimental variables controlled (experimental only).

(Note: To review and determine the type of research you are engaging in, please review "Selecting A Research Methodology," p. II 25 to 29.)

RESULTS

This section should provide a clear and comprehensive narrative description of the findings of the study. In a historical, descriptive, evaluative, or action research project, this section would first focus on defining specific answers to each original research question. In a correlational, causal-comparative, or experimental research project, the

central focus would be on whether or not the results supported the hypothesis(es) and to what degree.

If the research method was evaluative, final conclusions reached must be clearly defined.

If research procedures included survey(s), interview(s), focus group(s), etc., specific and detailed results of each also must be provided.

Action research also requires a final product of some kind; depending on the stated purpose, this may be a standard operating procedure, a strategic plan, a new policy, etc. The final product should be generally described in this section and included in its entirety as an Appendix.

It also would be appropriate to describe "unexpected" findings, i.e., information derived from the data that was not intentionally sought but is relevant to the problem. Numerical data should be presented in clearly labeled tables followed by narrative summaries, which highlight important factors.

Results and findings must be presented in a logical and objective manner **without personal editorializing.** Generally, all data used to derive the results should be presented in this section, and the process by which the analysis was accomplished should be described completely.

However, when data are particularly long and complex, only the narrative summary should be included in the Results section and detailed descriptions of all data should be placed in an Appendix.

Evaluation Criteria

1.   Results/Findings clearly and concisely stated in narrative form.

2.   Detailed results of all procedures provided.

3.   Specific answers to all original research questions provided or explanation of whether or not original hypothesis was supported by results, as appropriate.

4.   Comprehensive analysis of the data included.

5.   Tables and figures clearly presented and labeled; appropriate data selected for presentation.

6.   Final product(s) of action research included as an Appendix.

DISCUSSION

In this section, the writer has an opportunity to provide his/her personal conclusions about the study results. Three basic issues should be discussed. First, how did the study results compare to the findings of others discussed in the literature review? (In doing this comparison, the student is expected to provide actual citations of selected references.)

Second, what is the author's own interpretation/evaluation of the results? Third, what are the implications of the results for the organization?

Evaluation Criteria

1.   Relationship between the study results and specific findings of others discussed, using extensive citations from reference documents.

2.   Students' interpretation of the study results presented.

3.   Organizational implications of the study results clearly stated.

RECOMMENDATIONS

This section must include recommendations for the future: What needs to happen next within the organization, based on research results? Recommendations may focus on additional research requirements, suggested program implementation methods, follow-up/evaluation proposals, etc.

All recommendations should be supported clearly by data presented in the report and should relate specifically to the original problem and purpose statements. Explain how each recommendation represents positive change and/or potential improvement within the organization.

Conclude the section with general recommendations for "Future Readers" who may wish to replicate some or all of the study within their own organization.

Evaluation Criteria

1.   Recommendations logically flowed from research findings.

2.   Recommendations were supported by the data presented.

3.   Recommendations related to the stated problem and purpose of the study.

4.   Recommendations provided for the student's organization and for future readers.

CONTENT

Accurate information must be presented in terms of theories, principles, and procedures used in the project. EFOP curriculum will be used as the basis for judging content.

Evaluation Criteria

1.   Theories, principles, and procedures presented and used properly.

2.   Information and data accurate and up-to-date.

WRITING

Certain style rules will require access to the *Publication Manual of the American Psychological Association, 5th Edition*.

Evaluation Criteria

1.   Correct grammar, punctuation, spelling, sentence structure, and typing/editorial style.

2.   All required sections of paper included.

3.   Reference list and in-text references documented properly, using APA Guidelines.

4.   Title reflects nature of the study; correct title page format followed.

5.   Table of Contents includes all major headings; a list of tables was provided if more than one table was used; Appendices were listed and defined.

6.   Certification statement signed and included.

For EFOP participants who began the program before September 2003, the following report format as listed on pages II-13 to II-23 is optional.

REPORT FORMAT

REQUIRED ELEMENTS OF PAPER (IN ORDER)

1.   Title Page (separate page).
      (See sample in Appendix A-7)

2.   Abstract (Start on a separate page).

3.   Table of Contents (Start on a separate page).

4.   Main body of paper, including the following sections:

      - Introduction

      - Background and Significance

      - Literature Review

      - Procedures

      - Results

      - Discussion

      - Recommendations

      Start Introduction on a separate page. **Do not** start any other major headings within the main body of the paper on a separate page, **unless** only the heading or the heading and one subsequent line will fit at the bottom of a page.

5.   Reference List [Start on a separate page].
      (See sample in Appendix A-9)

6.   Appendices (optional)
      [Start each on a separate page].

SPECIFIC EVALUATION CRITERIA

Reports will be evaluated on 10 separate components. (See sample Evaluation Form in Appendix A-3 through A-5. Note: The sample evaluation form in the Appendix, page A-3, is for reference only; actual forms will be attached by NFA to all ARP's when they are forwarded to the evaluator.) Each component has specific criteria by which it will be

measured. When an evaluation component is also a required section of the paper (i.e., the first **eight** components), **no credit** will be given unless a section with that title is included in the paper.

ABSTRACT

Students are required to include an abstract of their project along with the completed report. The abstract should summarize the problem, purpose, research method, research questions or hypothesis, procedures, results, and recommendations of the study. It should not contain more than 300 words.

Evaluation Criteria

1.   Accurate and self-contained.

2.   Primarily written in past tense.

3.   Problem statement defined.

4.   Purpose statement defined.

5.   Research method defined.

6.   Research question(s) or hypothesis(es) defined.

7.   Procedures summarized.

8.   Results summarized.

9.   Recommendations summarized.

INTRODUCTION

This section sets the stage for the research completed by the author. After reading the **Introduction**, the reader should clearly understand the **nature of the problem**, which led to the study, the **purpose** of the study, the **research method** chosen (historical, descriptive, evaluative, action, correlational, causal-comparative, or experimental) and the **research questions** addressed or the **hypothesis**, which was tested.

Evaluation Criteria

1.   Problem statement precisely and clearly defined.

2.   Purpose of the applied research project precisely and clearly stated.

3.   Specific research method used in the study identified.

4.   Research questions clearly stated. (For historical, descriptive, evaluative, or action research only).

<div align="center">OR:</div>

5.   Hypothesis clearly stated (for correlational, causal-comparative, or experimental research only) and appropriate for research method identified.

BACKGROUND AND SIGNIFICANCE

This section is an extension of the introduction wherein the author explains the **background** of the problem being researched; the past, present, and probable future **impact** of the problem on the organization; and how the project is related to the specific EFOP course being completed.

Remember, the research project must investigate a specific problem presently affecting the student's **own** organization. It is not acceptable to complete a project on some general fire service issue. Thus, this section must explain in considerable detail (1) the seriousness of the problem, (2) the significance of the project to the organization, and (3) which specific EFOP course content area(s) relate to the problem and/or its hopeful resolution.

Evaluation Criteria

1.   Clear and complete background analysis of the problem provided.

2.   Sufficient evidence provided to justify the study from an organizational perspective, based on past, present, and probable future impact on the organizational effectiveness.

3.   Definitive linkage established between the research problem and specific content area(s) of the relevant EFOP course.

4.   Established linkage to one of five USFA operational objectives.

LITERATURE REVIEW

This section summarizes critical findings of others who have **published** documents related to the research problem and clearly describes how such information influenced the author's research effort.

If appropriate, this section also may include a summary of any interviews the author conducted with problem-area "experts." Be sure to explain why specific person(s) were selected to interview. As with published material, such summaries should describe clearly how the interview(s) influenced the research project.

Evaluation Criteria

1.   Sufficiently comprehensive.

2.   Findings of others reviewed.

3.   Summary statements (concluding summary paragraph[s] at the end of Literature Review) provided on how the findings/observations of others influenced the project.

4.   Current sources.

PROCEDURES

This section explains how the student arrived at the final results of the study. Procedures should be described in sufficient detail to: (1) permit the evaluator to determine whether the researcher has selected and completed procedures which were appropriate for the stated purpose and method; (2) allow interested readers to replicate the project in their own organization; and (3) explain how the researcher arrived at final results.

The general procedures listed in the Student Manual of the *Executive Development* course (Research Module) should provide sufficient guidance on acceptable procedures for those doing historical, descriptive, evaluative, or action research. Individuals who elect to conduct correlational, causal-comparative, or experimental research should consult L.R. Gay's *Educational Research Competencies for Analysis and Application* for guidance on required research procedures.

In any event, the procedures section should clearly describe how the project progressed from beginning to end. (What was done? When? By whom? Who was involved?) If interviews or observations were used, describe the process in detail: when, how long, purpose, questions asked/information sought, etc. If a survey was conducted, explain the purpose and define the audience (number of total population surveyed, number of surveys returned, etc.). Always include a copy of the actual survey as an appendix. If a **sample** was used, provide clear evidence of proper sample selection (appropriate size, random selection, and how you assured that the sample was representative of the total population).

Evaluation Criteria (Historical, Descriptive, Evaluative, and Action Research)

1.   Procedures sufficiently and clearly delineated to permit replication.

2.   Procedures appropriate to achieve the purpose of the study.

3.   For surveys, definition of total population included; if used, process for selecting samples described.

4.   Limitations noted.

5.   A Definition of Terms section included for any ambiguous concepts.

Evaluation Criteria (Correlational, Causal-Comparative and Experimental Research)

1.   All of above, **plus**:

2.   Appropriate statistical analyses selected and justified.

3.   Hypothesis clearly stated and variables clearly defined.

4.   Statistical significance of results documented.

5.   Nonexperimental variables controlled (experimental only).

(Note: To review and determine the type of research you are engaging in, please review the Appendix "Selecting A Research Methodology.")

RESULTS

This section should provide a clear and comprehensive narrative description of the findings of the study. In a historical, descriptive, evaluative, or action research project, this section would first focus on defining specific answers to each original research question. In a correlational, causal-comparative, or experimental research project, the central focus would be on whether or not the results supported the hypothesis(es) and to what degree.

If the research method was evaluative, final conclusions reached must be clearly defined.

If research procedures included survey(s), interview(s), focus group(s), etc., specific and detailed results of each also must be provided.

Action research also requires a final product of some kind; depending on the stated purpose, this may be a standard operating procedure, a strategic plan, a new policy, etc. The final product should be generally described in this section and included in its entirety as an Appendix.

It also would be appropriate to describe "unexpected" findings, i.e., information derived from the data, which was not intentionally sought, but is relevant to the problem. Numerical data should be presented in clearly labeled tables followed by narrative summaries, which highlight important factors.

Results and findings must be presented in a logical and objective manner **without personal editorializing.** Generally, all data used to derive the results should be presented in this section, and the process by which the analysis was accomplished should be completely described.

However, when data are particularly long and complex, only the narrative summary should be included in the Results section and detailed descriptions of all data should be placed in an Appendix.

Evaluation Criteria

1.   Results/Findings clearly and concisely stated in narrative form.

2.   Detailed results of all procedures provided.

3.   Specific answers to all original research questions provided or explanation of whether or not original hypothesis was supported by results, as appropriate.

4.   Comprehensive analysis of the data included.

5.   Tables and figures clearly presented and labeled; appropriate data selected for presentation.

6.   Final product(s) of action research included as an Appendix.

DISCUSSION

In this section, the writer has an opportunity to provide his/her personal conclusions about the study results. Three basic issues should be discussed. First, how did the study results compare to the findings of others discussed in the literature review? (In doing this comparison, the student is expected to provide actual citations of selected references.) Second, what is the author's own interpretation/evaluation of the results? Third, what are the implications of the results for the organization?

Evaluation Criteria

1.   Relationship between the study results and specific findings of others discussed, using extensive citations from reference documents.

2.   Students' interpretation of the study results presented.

3.   Organizational implications of the study results clearly stated.

RECOMMENDATIONS

This section must include recommendations for the future: What needs to happen next within the organization, based on research results? Recommendations may focus on additional research requirements, suggested program implementation methods, follow-up/evaluation proposals, etc.

All recommendations should be supported clearly by data presented in the report and should relate specifically to the original problem and purpose statements. Explain how each recommendation represents positive change and/or potential improvement within the organization.

Conclude the section with general recommendations for "Future Readers" who may wish to replicate some or all of the study within their own organization.

Evaluation Criteria

1.   Recommendations logically flowed from research findings.

2.   Recommendations were supported by the data presented.

3.   Recommendations related to the stated problem and purpose of the study.

4.   Recommendations provided for the student's organization and for future readers.

CONTENT

Accurate information must be presented in terms of theories, principles, and procedures used in the project. EFOP curriculum will be used as the basis for judging content.

Evaluation Criteria

1.   Theories, principles, and procedures presented and used properly.

2.   Information and data accurate and up-to-date.

WRITING

See Preparing the Final Document (pages II-20 through II-23) for rules regarding typing, layout, writing conventions, and editorial style.

Certain style rules will require access to the *Publication Manual of the American Psychological Association, 5th Edition*.

Evaluation Criteria

1.   Correct grammar, punctuation, spelling, sentence structure, and typing/editorial style. (See Preparing the Final Document, pages II-21 and II-22)

2.   All required sections of paper included.

3.   Reference list and in-text references documented properly, using APA Guidelines.

4.   Title reflects nature of the study; correct title page format followed. (See Appendix A-7)

5.   Table of Contents includes all major headings; a list of tables was provided if more than one table was used; Appendices were listed and defined.

6.   Certification statement signed and included.

PREPARING THE FINAL DOCUMENT

PUBLICATION MANUAL OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

In July of 2001, the American Psychological Association (APA) published a fifth edition of *The Publication Manual*. This replaces the fourth edition.

EFOP students must have access to one of the two versions to meet established requirements for uniform presentation of various elements of the report, such as reference citations, grammar, punctuation, construction of tables, figures, and graphs, and many other editorial style rules.

At the same time, students must recognize that many sections of the manual apply only to individuals who are submitting materials for publication in the APA Journal. Thus, an EFOP student's use of the manual will be limited to very specific sections of the text.

The following lists should prove helpful in determining applicability of various parts of the manual when preparing the EFOP Applied Research Project (ARP) report:

	4th Edition	**5th Edition**
Expressing Ideas and Reducing Bias in Language This chapter contains very useful pointers for assessing and improving written communication. Specific principles of effective writing are presented in three major areas: Writing Style; Grammar; and Guidelines to Reduce Bias in Language.	Chapter 2 pp. 23 - 60	Chapter 2 pp. 31 - 76
APA Editorial Style This chapter (or chapters) provides instructions on editorial style, which ensures uniform presentation of various style elements in all ARP reports. This chapter (or chapters) is the most critical source of information within the manual for the EFO student. Failure to follow the conventions described here, particularly in regard to reference citation, will result in an unsatisfactory score on the "**writing**" element of the report.	Chapter 3 pp. 61 - 234	Chapter 3 pp. 77 - 214 Chapter 4 pp. 215 - 281

	4th Edition	5th Edition
Nonapplicable Sections of the Manuals:		
Much of the material in these chapters is in direct conflict with ARP requirements, as described in the EFO Guidelines.	Chapters 1, 4, 5, 6, & 7 **do not apply**	Chapters 1, 5, 6, 7, 8, 9 **do not apply**
	Appendices A, B, & C **do not apply**	Appendices A, B, C, & E **do not apply**
The following sections of Chapter 3 also **do not apply**:		
Choosing italics versus underlining	Section 3.19	Section 3.19
Headings	Sections 3.30 - 3.32	Sections 3.30 - 3.32
Metrication	Sections 3.50 - 3.52	Sections 3.50 - 3.52
Statistical and Mathematical copy	Sections 3.53 - 3.61B	Sections 3.53 - 3.61
Note: This material does not apply if you are reporting on historical, descriptive, evaluative, or action research. It **would**, however, be applicable to correlational, causal-comparative, or experimental research reports.		
Author note	Section 3.89	Section 3.89
Punctuation, spelling, and capitalization	Chapter 3 pp. 62 - 70	Chapter 3 pp. 78 - 100
Use of italics--Since EFO papers are not typeset after submission, italics should be used to designate the title of a book, journal, or newspaper rather than underlining. This applies throughout the paper, including the Reference List. For additional examples of specific uses of italics within the text see APA Manual.	Table 5, Column 2 pp. 81 - 82	pp. 100 - 103 (Note changes from 4th Edition)

	4th Edition	**5th Edition**
Abbreviations	Chapter 3 pp. 80 - 89	Chapter 3 pp. 103 - 111
Numbers	Chapter 3 pp. 99 - 105	Chapter 3 pp. 122 - 130
Tables, figures, and graphs	Chapter 3 pp. 120 - 164	Chapter 3 pp. 147 - 201
Reference Citations in Text This section of the manual provides instructions on in-text citations for materials that are not direct quotes. Direct quotes are treated differently; see separate listing below. References cited in text must appear in the reference list; conversely each entry in the reference list must be cited and discussed within the paper. **Any material in your report that is not original must be acknowledged. This includes direct quotes and paraphrased ideas or summaries. The only exception to this rule would be information which is universally considered "common knowledge."** **Failure to acknowledge any source is plagiarism, which constitutes grounds for dismissal from EFOP. If in doubt, provide a citation!**	Chapter 3 pp. 168 - 174	Chapter 3 pp. 207 - 214
Direct quotations within the text	Chapter 3 pp. 95 - 99	Chapter 3 pp. 117 - 122
Reference List--For specific instructions and examples	Chapter 3 pp. 174 - 234	Chapter 4 pp. 215 - 281
Special section covering legal documents	Chapter 3 pp. 223 - 234	Appendix D pp. 397 - 410

	4th Edition	**5th Edition**
When citing EFOP applied research project report(s) (example)	#46 p. 209	#46 p. 258
NFPA Standards (example)	#48 p. 210	#48 p. 259
Remember, this is a **reference list**; only items actually discussed within the paper should be included. **You are not developing a bibliography** (a generic list of documents related to your topic).		
Table of Contents Include all major section headings. Provide a list of tables, if more than one has been presented within the text. List, by title, each Appendix. (See EFOP paper for a good example.)		
Appendices	Chapter 3 pp. 166 - 167	Chapter 3 pp. 205 - 207

SELECTING A RESEARCH METHODOLOGY
(EXCERPTED FROM THE *EXECUTIVE DEVELOPMENT* COURSE MANUAL)

A.   Historical research.

     1.   Definition: studying, understanding, and explaining past events.

     2.   Purpose: to explain the present situation and/or to anticipate the future by analyzing the past.

     3.   Focuses on understanding how past events/trends have influenced or caused a present situation.

     4.   Generally limited to a specific timespan.

     5.   Examples of historical research.

          a.   To identify the effects of National Fire Protection Association (NFPA) 1500, *Standard on Fire Department Occupational Safety and Health Program* on the department since its adoption in 1987.

          b.   To define in-service training trends from 1980 to present.

B.   Descriptive research.

     1.   Definition: determining and reporting the present status of something.

     2.   Purpose: to clarify and report the **way things are** at the present time.

     3.   Sometimes involves detailed observation of what is happening presently.

     4.   More often, involves describing attitudes or opinions.

     5.   Examples of descriptive research.

          a.   To describe what firefighters do in a typical 24-hour shift (i.e., percent of day spent on emergency runs, training, inspections, meals, sleeping, physical fitness, report writing, leisure activities, etc.).

          b.   To identify public opinion on an upcoming bond issue.

          c.   To describe employee satisfaction with department management.

C.   Evaluative research.

    1.   Definition: the systematic process of collecting and analyzing data in order to facilitate decisionmaking.

    2.   Purpose: to determine whether or not to continue, and/or to identify needed improvements.

    3.   Examples of evaluative research.

        a.   To evaluate the effectiveness of recruit training.

        b.   To evaluate the quality of service provided to the community.

D.   Action research.

    1.   Definition: taking action to **solve** an existing problem and/or to **improve** performance.

    2.   Purpose: to apply new information/theories/methodologies to actual organizational problem/need.

    3.   Examples of action research.

        a.   To develop an officer training program.

        b.   To develop and implement a strategic marketing plan for the department.

DEFINE AND IMPLEMENT PROCEDURES

A.   Research procedures.

    1.   Historical research.

        a.   Collect all written documents related to the problem (Standard Operating Procedures (SOP's), policies, regulations, memos, correspondence, reports, records, minutes of meetings, etc.).

        b.   Compile a chronological series of events that led up to present problem.

        c.   Identify factors/effects/causes related to each event and to the present problem.

     d.   Interview and/or survey primary sources who have firsthand knowledge of past events related to the problem.

     e.   Analyze, organize, and synthesize all collected data within the context of your stated purpose and research questions.

     f.   Draw conclusions about the past and formulate generalizations about the present and/or future.

2. Descriptive research.

     a.   Select subjects to be studied.

     b.   Decide whether or not a sample is necessary. If it is, use appropriate sample selection techniques that ensure random selection of subjects, a sufficiently large sample, and a sample that is representative of the total general population.

     c.   Select technique(s) for collecting required data (survey, personal interviews, and/or personal observations).

              Note: Should you, in a very rare situation, choose to limit your research procedures to personal interviews, you must be very careful to ensure an adequate and acceptable research effort. Multiple, indepth interviews would be required. Rationale and justification must be provided in the Procedures section of the report for limiting your study in such a way. **In general, procedures that are limited to interviews alone will not be acceptable.**

     d.   Conduct selected data collection activities.

     e.   Organize, analyze, and document collected data in detail.

3. Evaluative research.

     a.   Define the parameters of the evaluation study: What exactly do you wish to evaluate?

     b.   Identify specific criteria against which you wish to measure the item being evaluated.

              - What are specific, key indicators of success? Effectiveness? What is it supposed to look like if it's working right?

- Concentrate on defining objective, measurable, meaningful factors.

    c.   Develop a plan for measuring each evaluative criterion objectively and thoroughly.

    d.   Conduct the study; remain objective.

    e.   Analyze and evaluate all collected data in order to reach a final evaluative conclusion.

4.   Action research.

    a.   Recheck problem statement for clarity and comprehensiveness.

    b.   Establish a broad goal: Your purpose statement usually will be an adequate goal statement.

    c.   Conduct a situational analysis to determine

        - Causal/Contributing factors.

        - Existing situational forces likely to assist you in reaching the goal.

        - Existing situational forces likely to impede reaching the goal.

    d.   Define and prioritize strategies.

        - Eliminate casual/contributing factors.

        - Capitalize on helpful forces.

        - Minimize or eliminate impeding forces.

    e.   Set objectives--describe specific, measurable outcomes for each selected strategy.

    f.   Develop step-by-step action plans for accomplishing each objective.

    g.   Implement the plans--monitor your progress to ensure timely completion of the goal.

    h.   Evaluate outcomes.

Note: Students who elect to conduct correlational, causal-comparative, or experimental types of research must follow detailed procedures outlined in Gay's book, *Educational Research: Competencies for Analysis and Application*.

APPENDIX

CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

Signed: _____

Executive Fire Officer
Applied Research Project
Evaluation Form

(course & date)

(date mailed to evaluator)

Title: (project title)
Name of Student:
National Fire Academy Evaluator:

Phone:

Email:
Address:

Average Score:

CRITERIA	COMMENTS	F D C B A
ABSTRACT		0 1 2 3 4
INTRODUCTION		0 1 2 3 4
BACKGROUND AND SIGNIFICANCE		0 1 2 3 4
LITERATURE REVIEW		0 1 2 3 4
PROCEDURES		0 1 2 3 4
RESULTS		0 1 2 3 4
DISCUSSION		0 1 2 3 4
RECOMMENDATIONS		0 1 2 3 4
CONTENT ACCURACY		0 1 2 3 4
WRITING		0 1 2 3 4

(SAMPLE)

STUDENT NAME:

ABSTRACT
_____Accurate and self-contained.
_____Primarily written in past tense.
_____Problem statement defined.
_____Purpose statement defined.
_____Research method defined.
_____Research question(s) or hypothesis(es) defined.
_____Procedures summarized.
_____Results summarized.
_____Recommendations summarized.

INTRODUCTION
_____Problem statement clearly and precisely defined.
_____Purpose precisely and clearly stated.
_____Specific research method identified.
_____Research question(s) clearly stated (for historical, descriptive, evaluative, or action research only). or:
_____Hypothesis clearly stated (for correlational, causal-comparative, or experimental research only).
_____Hypothesis appropriate for research method identified.

BACKGROUND & SIGNIFICANCE
_____Clear and complete background analysis of problem provided.
_____Sufficient evidence provided to justify study from an organizational perspective, based on past, present, and probable future impact on organizational effectiveness.
_____Definitive linkage established between the research problem and specific content area(s) to one of the five USFA operational objectives.

LITERATURE REVIEW
_____Sufficiently comprehensive.
_____Findings of others reviewed.
_____Summary statements provided on how the findings/observations of others influenced the project.
_____Sources are current.

PROCEDURES
(Historical, Descriptive, Evaluative, and Action Research)

_____Procedures sufficiently delineated to permit replication.
_____Procedures appropriate to achieve stated purpose.
_____For surveys, definition of total population provided; if used, process for selecting a sample described in detail.
_____Limitations noted.
_____Definition of terms section included for any ambiguous concepts.

(Correlational, Causal-Comparative and Experimental Research)

All of the above, plus:
_____Appropriate statistical analyses selected and justified.
_____Hypothesis clearly stated and variables clearly defined.
_____Statistical significance of results documented.
_____Nonexperimental variables controlled (experimental only).

(SAMPLE)

RESULTS

    _____ Results/findings clearly and concisely stated in narrative form.

    _____ Detailed results of all procedures provided.

    _____ Specific answers to original research questions provided or explanation of whether or not original hypothesis was supported by results, as appropriate.

    _____ Comprehensive analysis of data included.

    _____ Tables and/or figures are clearly presented, correctly labeled, and contain appropriate data.

    _____ Final product(s) of action research included as an Appendix.

DISCUSSION/IMPLICATIONS

    _____ The relationship between the study results and specific findings of others is discussed, using extensive citations from reference documents.

    _____ Author's interpretation of study results is presented.

    _____ Organizational implications of results clearly stated.

RECOMMENDATIONS

    _____ Recommendations logically flowed from the results.

    _____ Recommendations were supported by the data collected.

    _____ Recommendations related to the stated problem and purpose.

    _____ Recommendations provided for the organization and for future readers.

    _____ Theories, principles, and procedures were presented and used properly.

    _____ Information and data are accurate and up-to-date.

CONTENT   (Note: This is not a section of the paper; rather it refers to the technical content of the entire paper.)

    _____ Theories, principles, and procedures were presented and used properly.

    _____ Information and data is accurate and up-to-date.

WRITING

    _____ Correct grammar, punctuation, spelling, sentence structure, and typing/editorial style.

    _____ All required sections of paper included.

    _____ Reference lists and in-text references documented properly using APA Guidelines.

    _____ Title reflects nature of study; correct title page format followed.

    _____ Table of Contents included all major headings; a list of tables provided if more than one used; and Appendices were listed and defined.

    _____ Certification statement signed and included.

(SAMPLE)

Note: For participants beginning EFOP in September 2003 or later, refer to the sample title page in the APA manual, page 306. The sample title page provided below is for the EFOP participants using the older, optional format.

<div style="border:1px solid">

(SAMPLE TITLE PAGE)

IMPACT OF A TEAM-BUILDING RETREAT ON TOP MANAGEMENT

(COURSE TITLE)

BY: Bill Smith, M.A.
           Midwest Fire Department
           Midwest, Maine

An applied research project submitted to the National Fire Academy
as part of the Executive Fire Officer Program

January 1997

</div>

(4th Edition)

References

American Psychological Association (1994). *Publications manual (4th ed.).* Washington, DC: American Psychological Association.

Blair, J. & Czaja, R. (1996). *Designing surveys: A guide to decisions and procedures.* Thousand Oaks, CA: Pine Forge Press.

Gay, L.R. (1987). *Educational research: Competencies for analysis and application. (3rd ed.).* Columbus, OH: Merrill.

(5th Edition)

References

American Psychological Association (1994). *Publications manual (4th ed.).* Washington, DC: American Psychological Association.

Blair, J. & Czaja, R. (1996). *Designing surveys: A guide to decisions and procedures.* Thousand Oaks, CA: Pine Forge Press.

Gay, L.R. (1987). *Educational research: Competencies for analysis and application. (3rd ed.).* Columbus, OH: Merrill.

(SAMPLE)

(SAMPLE)

National Fire Academy
Executive Fire Officer Program
Graduate Certificate Information

Certificates will be mailed to the supervisor **you specify** for official presentation upon completion of the EFOP. Your U.S. Senators, Representatives, and Governor will receive notice of your achievement. In order to accomplish this, we require the following information:

Graduate's Name: _____

Supervisor(s):
Department: _____ Address: _____
City: _____ State: _____ Zip: _____

U.S. Senator(s):
Address:_____
City: _____ State: _____ Zip: _____

U.S. Representative(s):
Address:_____
City: _____ State: _____ Zip: _____

State Governor:
Address:_____
City: _____ State: _____ Zip: _____

Please send this form to NFA together with your final Applied Research Project.

For additional information, please use the other side of this form.

United States Fire Administration

National Fire Academy

Executive Fire Officer Program

Applied Research Project Proposal

Please mail your final version of the Applied Research Project to NFA, not to the evaluator.

EFOP Participant:	Assigned Evaluator:
Name:	**Name:**
Department:	**Address:**
Address:	**City, State, Zip:**
City, State, Zip:	**Telephone:**
Telephone:	**E-mail:**
Fax:	
E-mail:	
Course:	

Title of Research:

Problem Statement:

Purpose Statement:

Research Questions:

Identify Research Method and Describe Research Approach:

(Use one extra page if necessary)

(SAMPLE)

FREQUENTLY ASKED QUESTIONS (FAQ's)

What address do I return my project to?

Send your completed project (three copies) and a disk to:

> National Fire Academy
> 16825 South Seton Avenue
> Emmitsburg, Maryland 21727
>
> Attn: Executive Fire Officer Program Research Project

When is my ARP due to NFA?

The submission date for the ARP is 6 months after the final class day of the course. For example, if the class ended on Friday, March 30, the ARP would be due to NFA on September 30.

How long does it take for my project to be completed?

The projects are sent by Priority Mail to evaluators on the Friday of the week they are received. Evaluators have 4 to 6 weeks to grade the project and return to the Academy for processing. Please allow for processing time when NFA receives the ARP from you and from the evaluator. Under normal conditions, you should receive your evaluated ARP 2-3 months from the time you send it to NFA.

Do I need to send a disk and three hardcopies of my project?

Yes. It is not the intention of acquiring the project on disk in order to make copies from the Academy's end. It is our intention in the future that these projects will be available on a bulletin board service or something of that nature.

Will I receive the graded project back?

Yes, you will receive your graded project with evaluator's comments back after processing. A copy of your graded project will be maintained within your file.

Do I have to reapply each year for the next course in the EFOP series?

No, you will be automatically scheduled into your next course. Due to the project requirement, you will be scheduled approximately 1 year from the date of your last course.

What if I cannot attend the assigned date?

You need to write to the Admissions Office requesting a new date. But, remember, if the project is not completed prior to newly scheduled class date, you will be cancelled.

Can I request an extension?

Our extension policy is fairly explicit. You have 6 months from the finish of your course to complete the project. Should you not complete the project in that length of time, you will be removed from the program. If you have extenuating circumstances, you will need to express those in writing to the Superintendent and he will make a determination as to the granting of the extension and the length of time (if granted). See page I-11.

Will I be removed from the program if my project is not received?

Yes. If your project is not received within the required timeframe and if you have not advised the Academy about any mitigating circumstances, you will be removed. You will then have to reapply to EFOP. Should you be reaccepted to the program, you will have a timeframe to complete the required outstanding project before attending the next course, or receiving your graduate certificate.

Where do I send my project if it requires resubmission work?

Do Not send the project directly to the evaluator who graded your project. Please mail it back to the Academy and we will process your project and send onto the evaluator.

Do I need to request my graduate certificate?

No. Upon completion of your final project, we will initiate the printing and mailing of your certificate. The certificate will be mailed to your supervisor for presentation to you. Certificates are printed and mailed the week of your completion. The only exceptions will be for those who do not turn in their information sheet. A Graduate Certificate Information sheet will be provided during the final EFOP course (refer to I-2, Important Reminders for Fiscal Year 2003). The EFOP certificate cannot be mailed unless NFA has received this form properly completed.

I thought that when I finished the last class, the cancellation policy didn't apply to me?

Yes, it does. Just because you have completed the four required classes does not mean that you do not have to submit your project within the established timeframe. You will be removed from the program and will have to follow the reapplication process and ARP in order to be considered for graduation from the program.

When will the projects be available through an "online" service?

As the Academy moves towards the information superhighway, our new initiative of placing the projects onto a bulletin board service is evolving. Currently there are hundreds of ARP's online. To access this site go to: http://www.usfa.fema.gov/lrc

To search for papers, select "EFO Papers or Abstracts" from the Document Type list found on the Card Catalog search screen.

Can I obtain copies of the Outstanding Applied Research Projects?

Yes. You can download recent Outstanding Applied Research Projects from the U.S. Fire Administration's Web site at this address: http://www.usfa.fema.gov or you can request that a hard copy be sent to you through the mail.